AF 2910

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT	:	Matthew P.J. Baker et al.	ATTNY DOCKET NO.: PHB 34,348
SERIAL NO.	:	09/580,167	EXAMINER : Anan Mirza
FILED	:	May 30, 2000	ART UNIT : 2145
FOR	:	METHOD OF, AND A HETEROGENEOUS NETWORK FOR, TRANSMITTING DATA PACKETS	

RESPONSE TO NOTICE OF NON-COMPLIANT APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In Response to the "Notice of Non-Compliant Appeal Brief" dated August 14, 2006, Applicants enclose Appeal Brief originally submitted on September 14, 2006 with corrections deemed to be non-compliant.

No additional fees are believed to be necessitated by the foregoing amendment. However, should this be erroneous, authorization is hereby given to charge Deposit Account No. 502-470 for any underpayment, or credit any overages.

Respectfully submitted,
Daniel Piotrowski
Registration No. 42,079

Date: 9/13/06

By: Steve Cha
Attorney for Applicant
Registration No. 44,069

Mail all correspondence to:
Daniel Piotrowski, Registration No. 42,079
P.O. Box 3001
Briarcliff Manor, NY 10510-8001
Phone: (914) 333-9608
Fax: (914) 332-0615

Certificate of Mailing Under 37 CFR 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to MAIL STOP APPEAL BRIEF-PATENTS, COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA. 22313 on 9/18/06.

Steve Cha, Reg. No. 44,069
(Name of Registered Rep.)

(Signature and Date)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

In re the Application

Inventor	:	**Matthew P.J. Baker et al.**
Application No.	:	**09/580,167**
Filed	:	**May 30, 2000**
For	:	**METHOD OF, AND A HETEROGENEOUS NETWORK FOR, TRANSMITTING DATA PACKETS**

APPEAL BRIEF

On Appeal from Group Art Unit 2145

Date: September 13, 2006

Daniel Piotrowski
Registration No. 42,079
By: Steve Cha
Attorney for Applicant
Registration No. 44,069

Certificate of Mailing Under 37 CFR 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to MAIL STOP APPEAL BRIEF-PATENT, COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA. 22313 on September 13, 2006..

Steve Cha, Reg. No. 44,069
(Name of Registered Rep.)

(Signature and Date)

TABLE OF CONTENTS

I. REAL PARTY IN INTEREST

The real party in interest is the assignee of the present application, U.S. Philips Corporation, and not the party named in the above caption.

II. RELATED APPEALS AND INTERFERENCES

With regard to identifying by number and filing date all other appeals or interferences known to Appellant which will directly effect or be directly affected by or have a bearing on the Board's decision in this appeal, Appellant is not aware of any such appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-20 have been presented for examination. All of these claims are pending, stand finally rejected, bear the status "previously presented," and form the subject matter of the present appeal.

IV. STATUS OF AMENDMENTS

A Request for Reconsideration after Final Rejection was filed on March 15, 2006.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The instant application recites generally, as represented by the independent claims 1, 3 and 19, a method (claim 1), a heterogeneous network in means plus function format (claim 3) and a network including structural elements (claim 19). The remaining claims (claims 2, 4-18, and 20) depend from independent claims 1, 3, and 19, respectively, and recite further aspects of the invention claimed. Claim 1, which is typical of the remaining

independent claims recites a method of transmitting data packets DB1, DB2 (FIG. 2) over an interface between first and second heterogeneous parts 10, 18 (FIG. 1) includes a determining step and a reserving step (col. 2, lines 11-16). In particular, after transmission of the data packets begins, determination is made in the first part or interface, of the number of data packets being transmitted in a predetermined time (page 4, lines 12-14). In the second part, reservation is made of sufficient information carrying capacity by providing for at least one data packet in excess of the number determined (page 4, lines 21-24).

A data stream encountered according to the Motion Pictures Expert Group (MPEG) standard is characterized by data blocks of constant size flowing at a constant average bit rate. The rate of arrival of these blocks may not necessarily, however, correspond with the cycle rate on an International Electrical and Electronic Engineers (IEEE) 1394 bus. Yet, in a heterogeneous network, these two protocols, i.e., MPEG and IEEE 1394 may coexist (page 1, lines 14-19). Assume, for example, that the cycle has duration of 125 μs (page 1, lines 19-22; FIG. 2). As seen in FIG. 2, the 125 μs cycle currently being examined temporally spans MPEG data block 1 (DB1) and one fifth of MPEG data block 2 (DB2). Accordingly, sending one block per cycle would cause data to queue up at the transmitter, and eventually two blocks would have to be sent for one cycle to prevent buffer overflow at the transmitter. Thus, in one example discussed in the specification, the transmitter may send one block per cycle for 99 consecutive cycles, and then send two blocks in the hundredth cycle (page 1, lines 23-32). Accordingly, to accommodate the worst-case scenario, the part 10 reserves enough information carrying capacity for 2 blocks per each cycle (page 1, lines 20-22). The part 18 uses this

bandwidth determination in its own reserving (page 2, lines 1-4). However, the wireless devices 20, 21 in part 18 may find 2 blocks per each cycle to be a difficult reservation to meet, and 2 blocks per each cycle is more than is needed (page 2, lines 4-7). The same phenomenon is seen in FIG. 3. In the first time period T1, four blocks are transmitted (DB10-DB13), but the buffer must be drained by sending an extra block in the next time period T2 for a total of five blocks (DB14-DB18) in time period T2. The present invention anticipates the need to accommodate the extra block DB15, by adding 1 (page 4, line 15: "N+1") to the total number of data blocks determined to have been sent in time period T1. In FIG. 3, the time period T1 is synchronized to the cycles, i.e., is a multiple of the cycle time period and begins and ends with a respective cycle. Thus, it suffices to add merely one block to the counted total for the time period T1. However, if the time period T1 is not synchronized to the cycles, it is required in general to add two blocks to the counted total (page 5, lines 6-9). Assume, for example, that T1 has a length that extends from the beginning of DB10 to the end of DB13. Under this assumption, either one or two blocks are needed, depending on the phase of T1. In particular, if T1 begins at the beginning of DB10, four data blocks are counted. Adding one data block to make five total therefore covers a contingency such as that shown for time period T2 in FIG. 3. If, on the other hand, the phase of T1 is such that it ends at the beginning of DB14, only three blocks are counted. Adding one block would only achieve a total of four blocks. Four blocks would be insufficient to cover the contingency seen in time period T2 of FIG. 3, which requires bandwidth to accommodate five blocks rather than four. Thus, if the time period T1 is not synchronized to the cycles, the general case requires that two blocks be added, rather than one, to the total counted for T1 (page 5, line 8).

At the commencement of transmission, the amount of information carrying capacity reserved in the second part may be made to correspond to that reserved in the first part. The amount of information carrying capacity reserved is then reduced during transmission to at least one packet in excess of the number determined (page 4, lines 12-15).

Independent claim 3 recites a network comprising a first and second parts and means, in the first part, for determining a number of data packets in a predetermined time and means, in a second part, for receiving the data packets and reserving sufficient information carrying capacity corresponding to at least one data packet in excess of the number determined wherein the transmission occurs in consecutive cycles and the at least one amounting to a quantity that differs depending upon whether the predetermined time is synchronized. Independent claim 19 recites a network similar to that recited in claim 3.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

In the pending matter, the issue to be reviewed on appeal is whether claims 1-19 are invalidly rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,321,260 to Takeuchi et al. ("Takeuchi") in view of U.S. Patent No. 6,404,739 to Gonno.

As mentioned in the Request for Reconsideration filed on March 15, 2006, whether claim 20 is rejected is not clear from the Office Actions of record, and the subsequent Advisory Action is non-responsive. The appellants accordingly assume, for purposes of appeal, that claim 20 is rejected and therefore included in the appeal.

VII. ARGUMENT

Claims 1, 3, 6, 7, 13 and 14

Claim 1 recites:

> A method of transmitting data packets over an interface between first and second heterogeneous parts, the method comprising the steps of: after transmission of the data packets begins, determining, in the first part or interface, a number of data packets being transmitted in a predetermined time; and
> reserving, in the second part, sufficient information carrying capacity, corresponding to at least one data packet in excess of the number determined

Takeuchi fails to disclose or suggest the above-quoted aspect of claim 1 for at least the reasons set forth in the previous appeal brief, filed April 6, 2005 (hereinafter "previous appeal brief").

The final Office Action to follow, dated January 26, 2006, (hereinafter "Office Action") seems to maintain the position that Takeuchi discloses the first step of claim 1 (see Office Action, first paragraph under item 2).

Since the appellants believe the previous appeal brief adequately traverses this position the Examiner seemingly maintains (previous appeal brief, page 6 through page 7 until last paragraph), the appellants see no need to comment further on this matter.

The Office Action acknowledges that Takeuchi fails to disclose or suggest the reserving step of the present claim 1, but mistakenly cites Gonno to make up the difference.

In particular, claim 1 further recites, ". . . said transmission occurs in consecutive cycles, said at least one amounting to a quantity that differs depending upon whether said predetermined time is synchronized to said cycles."

The varying of the quantity depending upon whether synchronization is present is effective in the present invention, at least in the situation where:

a) the data arrives at a constant average bit rate and is to be transmitted in data blocks of constant size; and

b) an integer number of blocks are to be transmitted in each cycle.

The Office Action cites to the Gonno FIG. 5 embodiment (last sentence of paragraph bridging pages 2 and 3), but the transmission in FIG. 5 is not at a constant average bit rate.

The appellants first note that Takeuchi is directed to "transferring continuous media data such as voice data and moving picture" (col. 1, lines 8-9; col. 3, lines 49-50).

Such data was not usually transmitted under acknowledgment- or negative acknowledgment-based (ACK- or NAK-based) protocols at the time the invention was made, because such data is typically lossy and its continuous nature is intolerant of delay.

However, since the Office Action cites to Gonno FIG. 5, the Office Action seems to suggest that Takeuchi be outfitted with a NAK-based protocol.

As a consequence, even in the hypothetical situation where the data incoming to Gonno FIG. 5 arrives at a constant average bit rate, the NAK processing (FIG. 5, step S7) would cause the transmission of the formed data packets to stray from a constant average bit rate.

In particular, the retransmissions (FIG. 5, step S7) would cause the bit rate to rise and therefore stray from any constant average bit rate.

The bit rate would rise, because the continuous media data cannot be slowed down in arriving at its destination -- the video or audio continues to be presented at the destination at its respective presentation rate.

The appellants therefore respectfully submit that it is unclear how modification of Takeuchi, in view of Gonno, to resemble the present claim 1 would make sense, and seemingly would lead to arbitrary and non-judicious reservations of memory by the receiver. Even the idea of using the claim 1 protocol, albeit non-judiciously in the present context, seems to arise from nowhere but the appellants' invention disclosure.

It is accordingly unclear by what reasoning it would have been obvious to modify the Takeuchi receiver, in view of Gonno, to feature ". . . said at least one amounting to a quantity that differs depending upon whether said predetermined time is synchronized to said cycles."

In addition, neither reference appears to address the issue of a predetermined time period being synchronized or not being synchronized with a transmission cycle.

Also, the Office Action does not seem to provide guidance on what it deems to correspond to "said at least one" in our claim 1. Similarly, the Office Action does not specify what it deems to correspond to the "quantity" in our claim 1.

For at least these reasons, it is unclear what the Office Action deems to correspond to the "quantity that differs depending on whether" of our claim 1.

As to motivation, the Office Action appears to ignore the claim 1 language "depending upon whether said predetermined time is synchronized to said cycles."

The Advisory Action does not seem to further the position of the Office Action, and is therefore not discussed herein.

For at least the above reasons, claim 1 is deemed to distinguish patentably over the cited references.

Claim 3 likewise recites, ". . . said transmission occurs in consecutive cycles, said at least one amounting to a quantity that differs depending upon whether said predetermined time is synchronized to said cycles."

Claim 3 also mentions determining a number after transmission begins, and reserving corresponding to the number determined.

For at least these reasons, claim 3 likewise distinguishes patentably over the applied references.

Each of the other rejected claims depends from one of these base claims and is likewise deemed, at least due to its dependency. to distinguish patentably over the references the Office Action cites.

Claims 2 and 4

Claims 2 and 4 depend from base claims 1 and 3, respectively, and are therefore deemed to distinguish patentably over the cited references for at least the same reasons as their respective base claims.

In addition, claims 2 and 4 recite language that warrants further consideration based on its, additional, individual merits.

The Office Action seems to maintain its position, in the previous appeal brief, that the subject matter particular to claims 2 and 4 is to be found in Takeuchi.

The Office Action also maintains the exact same citation used in the previous appeal brief.

Claim 2 recites, "the amount of information carrying capacity reserved is reduced during transmission to at least one packet in excess of the number determined."

The Office Action cites again to Takeuchi column 3, line 64 through column 4, line 13, but this passage relates to Takeuchi procedures that have apparently nothing to do with capacity reduction.

Instead, this passage concerns the following:

Takeuchi relates to sending data packets (col. 3, line 67 - col. 4, line 1; col. 4, lines 22-23) from a sender node to a receiver node (col. 3, line 50). A preliminary step is the establishment of a logical connection from the sender node to the receiver node. Once the connection is established, the transfer of data packets can begin (col. 5, line 45(46)-51(52)). To establish the connection, the sender node transmits a control message CONNECT that is relayed to the receiver node (col. 5, lines 53-54). The receiver node then, if the connection can be established, transmits back a control message ACCEPT to the sender node. Having established the connection, transfer of data packets from the sender to the receiver node can commence (col. 5, lines 60-64).

In the context of computer networks, a "data packet" is understood to include, in addition to at least a destination address, payload. Thus, a "data packet" is distinguished from a "control message." Takeuchi make this same distinction (col. 4, lines 19-23: " . . . it sends a control message storing the information processor for sending data, an information processor for receiving data, the data packet size, and the data packet transfer rate . . .) Here, the control message is the CONNECT control message sent to establish

the logical connection, and the "data packet" is the vehicle for "transferring continuous media data from the sender node to the receiver node" (col. 3, lines 49-50) once the connection is established (see abstract, last sentence: " The sender node receives the ACCEPT command and then sends a data packet").

In relaying the CONNECT control message from the sender to the receiver node, each relay node "secures" from the node at the next hop "the bandwidth necessary" for the data packets to be transmitted once the connection is established (abstract). This reservation of bandwidth is made before the CONNECT control message is forwarded to the next hop (col. 5, lines 53(54)-58). The bandwidth reservation is used to update the bandwidth allocation table (FIG. 13, step 1304). When the CONNECT control message reaches the receiver node, all of the bandwidth allocations have been made and are reflected in the bandwidth allocation table. At that point, the bandwidth allocation table (col. 15, line 9: "bandwidth allocation table") is read by the sending control module of a node, and the sending control module calculates, based on the read value, the number of data packets to be transmitted to the next hop.

In short, Takeuchi fails to disclose or suggest, ". . . "the amount of information carrying capacity reserved is reduced during transmission to at least one packet in excess of the number determined."

Claim 4 recites, "said means for reserving . . . is responsive to signals indicating the number of data packets being transmitted for reducing the amount of information carrying capacity to at least one data packet in excess of the number determined."

An argument analogous to that applied above to claim 2 applies to claim 4.

Claims 5 and 12

Claims 5 and 12 depend from base claims 1 and 3, respectively, and are therefore deemed to distinguish patentably over the cited references for at least the same reasons as their respective base claims.

In addition, claims 5 and 12 recite language that warrants further consideration based on its, additional, individual merits.

Both claims 5 and 12 recite, "said determining and said reserving being performed both for said at least one time period as said predetermined time period and for a consecutively following time period as said predetermined time period."

The Office Action dismisses claims 5 and 12 as inherent, but inherency requires that the stated implementation be the only possible one.

Since the implementation implied in claim 5 is not the only possible one, inherency does not apply.

For example, the reservation may be updated periodically rather than continuously.

It is unclear on what proper basis the Office Action simply dismisses claims 5 and 12 as inherent.

For at least the above reasons, the instant ground of rejection is believed to be invalid.

Claims 9, 11, 16 and 18

Claims 9 and 16 depend from base claims 1 and 3, respectively, and are therefore deemed to distinguish patentably over the cited references for at least the same reasons as their respective base claims.

In addition, claims 9 and 16 recite language that warrants further consideration based on its, additional, individual merits.

Both claims 9 and 16 recite, ". . . multiplying a sum of said number and two by said size if said predetermined time is not synchronized to said cycles."

The Office Action cites to lines 23-31 in column 11 of Gonno.

This passage has nothing to do with the subject matter particular to claims 9 and 16.

Claims 11 and 18 depend from claims 1 and 3, respectively, and recite, respectively, ". . . said quantity is two if said predetermined time is not synchronized to said cycles. . ."

The Office Action cites to lines 12-16 of column 11.

This passage has nothing to do with the subject matter particular to claims 11 and 18.

Claims 8, 10, 15 and 17

These claims are written identically to claims 9, 11, 16 and 18, except that the addend is one instead of two if the time is synchronized.

The citations the Office Action makes are equally meaningless. In particular, with regard to claims 8 and 15, the Office Action cites to lines 31-37 in Takeuchi. This passage has nothing to do with the subject matter of claims 8 and 15. For

claims 10 and 17, the Office Action cites to lines 4-10 of column 12 in Gonno. This passage, once again, has no apparent relevance to the subject matter of claims 10 and 17.

For at least the above reasons, the instant grounds of rejection are believed to be invalid.

Claims 19 and 20

Claim 19 recites, ". . . said transmission occurs in consecutive cycles, said at least one amounting to one if said predetermined time is synchronized to said cycles, and amounting to two if said predetermined time is not synchronized to said cycles."

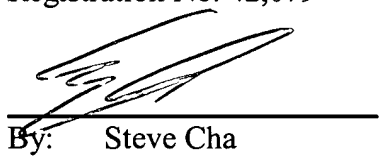
Claim 19 is therefore deemed patentable for at least the reasons set forth above with regard to the claim set 9, 11, 16 and 18 and the claim set 8, 10, 15 and 17.

Claim 20 depends from claim 19 and is deemed to be patentable at least due to its dependency.

CONCLUSION

In view of the above analysis, it is respectfully submitted that the referenced teachings, whether taken individually or in combination, fail to anticipate or render obvious the subject matter of any of the present claims. Therefore, reversal of all outstanding grounds of rejection is respectfully solicited.

Respectfully submitted,
Daniel Piotrowski
Registration No. 42,079



Date: September 13, 2006

By: Steve Cha
Attorney for Applicant
Registration No. 44,069

VIII. CLAIMS APPENDIX

1. (previously presented) A method of transmitting data packets over an interface between first and second heterogeneous parts, the method comprising the steps of:

after transmission of the data packets begins, determining, in the first part or interface, a number of data packets being transmitted in a predetermined time; and

reserving, in the second part, sufficient information carrying capacity, corresponding to at least one data packet in excess of the number determined, wherein said transmission occurs in consecutive cycles, said at least one amounting to a quantity that differs depending upon whether said predetermined time is synchronized to said cycles.

2. (previously presented) A method as claimed in claim 1, wherein at the commencement of transmission an amount of information carrying capacity reserved in the second part corresponds to that reserved in the first part, and wherein the amount of information carrying capacity reserved is reduced during transmission to at least one packet in excess of the number determined.

3. (previously presented) A heterogeneous network comprising:

a first and a second heterogeneous parts; and

an interface between the said parts,

wherein the first part has means for transmitting data packets and the first part or interface has means for, after transmission of the data packets begins, determining a number of data packets being transmitted in a predetermined time, and the second part has means for receiving the data packets transmitted by the first part and means for reserving sufficient information carrying capacity corresponding to at least one data packet in excess of the number determined, wherein said transmission occurs in consecutive cycles, said at least one amounting to a quantity that differs depending upon whether said predetermined time is synchronized to said cycles.

4. (previously presented) A heterogeneous network as claimed in claim 3, wherein said means for reserving initially reserves in the second part the same amount of information carrying capacity as is reserved in the first part and is responsive to signals indicating the number of data packets being transmitted for reducing the amount of information carrying capacity to at least one data packet in excess of the number determined.

5. (previously presented) The method of claim 1, wherein, for a buffer of said first part over at least one time period whose duration equals that of said predetermined time, said cycles fill said buffer faster than said buffer is emptied in transmitting to said second part, and wherein, for at least one other time period whose duration equals that of said predetermined time, said cycles fill said buffer slower than said buffer is emptied in transmitting to said second part, said determining and said reserving being performed both for said at least one time period as said predetermined time period and for a consecutively following time period as said predetermined time period.

6. (previously presented) The method of claim 1, wherein transmission delivers, to said first part, more than one of said data packets per cycle and sends, from said first part to said second part, an integral number of said data packets per cycle.

7. (previously presented) The method of claim 6, wherein said more than one entails part of data packet so that said more than one amounts to a non-integral number of said data packets.

8. (previously presented) The method of claim 1, wherein said data packets are of equal size, and said reserving comprises multiplying a sum of said number and one by said size if said predetermined time is synchronized to said cycles.

9. (previously presented) The method of claim 1, wherein said data packets are of equal size, and said reserving comprises multiplying a sum of said number and two by said size if said predetermined time is not synchronized to said cycles.

10. (previously presented) The method of claim 1, wherein said quantity is one if said predetermined time is synchronized to said cycles.

11. (previously presented) The method of claim 1, wherein said quantity if two if said predetermined time is not synchronized to said cycles.

12. (previously presented) The network of claim 3, wherein, for a buffer of said first part over at least one time period whose duration equals that of said predetermined time, said cycles fill said buffer faster than said buffer is emptied in transmitting to said second part, and wherein, for at least one other time period whose duration equals that of said predetermined time, said cycles fill said buffer slower than said buffer is emptied in transmitting to said second part, said determining and said reserving being performed both for said at least one time period as said predetermined time period and for a consecutively following time period as said predetermined time period.

13. (previously presented) The network of claim 3, wherein transmission delivers, to said first part, more than one of said data packets per cycle and sends, from said first part to said second part, an integral number of said data packets per cycle.

14. (previously presented) The network of claim 13, wherein said more than one entails part of data packet so that said more than one amounts to a non-integral number of said data packets.

15. (previously presented) The network of claim 3, wherein said data packets are of equal size, and said reserving comprises multiplying a sum of said number and one by said size if said predetermined time is synchronized to said cycles.

16. (previously presented) The network of claim 3, wherein said data packets are of equal size, and said reserving comprises multiplying a sum of said number and two by said size if said predetermined time is not synchronized to said cycles.

17. (previously presented) The network of claim 3, wherein said quantity is one if said predetermined time is synchronized to said cycles.

18. (previously presented) The network of claim 3, wherein said quantity if two if said predetermined time is not synchronized to said cycles.

19. (previously presented) A network comprising:

a first and a second parts; and

an interface between the said parts,

wherein the first part has a transmitter for transmitting data packets and the first part or interface is configured for, after transmission of the data packets begins, determining a number of data packets being transmitted in a predetermined time, and the second part is configured for receiving the data packets transmitted by the first part and for reserving sufficient information carrying capacity corresponding to at least one data packet in excess of the number determined, wherein said transmission occurs in consecutive cycles, said at least one amounting to one if said predetermined time is synchronized to said cycles, and amounting to two if said predetermined time is not synchronized to said cycles.

20. (previously presented) The network of claim 19, wherein transmission delivers, to said first part, more than one of said data packets per cycle and sends, from said first part to said second part, an integral number of said data packets per cycle.

IX. EVIDENCE APPENDIX

The appellant is not aware of any evidence.

X. RELATED PROCEEDINGS APPENDIX

The appellant is unaware of any related proceedings.